

## The systematic position of *Heliodines loriculata* Meyrick (Yponomeutoidea : Heliodinidae)

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### Summary

After examining the type specimen of *Heliodines loriculata* Meyrick, we found that this species is more suitably referred to the genus *Lithariapteryx*, a genus formerly only known from the western Nearctic, based on the external facies and genitalic structure.

### Résumé

Après examen du type de *Heliodines loriculata* Meyrick, nous avons trouvé que cette espèce est classée de façon plus appropriée dans le genre *Lithariapteryx*, un genre précédemment connu que de l'ouest néarctique, basé sur le faciès externe et la structure des genitalia.

*Heliodines loriculata* Meyrick, 1932 was described on the basis of a single female specimen from Bolivia. Its systematic position has not been verified subsequently. After examining the unique type preserved in Naturhistorisches Museum Wien (NHMW), we discovered that this species is more suitably placed in genus *Lithariapteryx* Chambers, 1875, rather than *Heliodines*. Meyrick (1932) noticed that this taxon is similar to *L. abroniaeella* Chambers, the type species of *Lithariapteryx*, but he considered *Lithariapteryx* to be a subjective synonym of *Heliodines* (Meyrick, 1914). However, Comstock (1940) resurrected *Lithariapteryx* to accomodate two new species in California, and Powell (1991) confirmed the generic status. The female genitalia as well as external facies of *H. loriculata* indicate that this South American species is more suitably referred to *Lithariapteryx*, as the only known representative of the genus outside of the western Nearctic. The structure of female genitalia of the *Heliodines nyctaginella* species group of *Heliodines* is similar to that of *Lithariapteryx*, but there are three possible synapomorphies found in *Lithariapteryx* including *L. loriculata* : 1) lack of

cylindrical sclerite at the ostium bursae, 2) each antennal banded with white at distal half, 3) raised scale tufts on forewing. We provisionally transfer *loriculata* to *Lithariapteryx*, pending discovery of the male, and redescribe it.

***Lithariapteryx loriculata* (Meyrick), comb. n.**

*Heliodines loriculata* Meyrick, 1932 ; Heppner, 1984 (checklist).

EXAMINED MATERIAL. Holotype (Fig. 1), "Oal" Bolivia, Rio Songo, 750 m (presumably Rio Zongo which drains eastward from the Cordillera Real in the Province La Paz of western Bolivia) (NHMW) (YFH genitalia prep. 0933).

EXTERNAL MORPHOLOGY OF FEMALE. Forewing length 5.5 mm. *Head*. Metallic dark grey, hood-like scale band behind vertex creamy white. Antenna metallic grey banded with white. Labial palpus porrect, creamy white, distal segment banded with grey. Scales behind eyes linear, buff yellow. *Thorax*. Metallic grey dorsally, metallic grey mixed with creamy white ventrally. Linear buff yellow scales present on propleuron. Fore leg metallic grey with distal end of procoxa white. Middle leg metallic grey with coxa, distal end of tibia, tibial spurs, part of tarsi turning pearl white. Hind leg metallic grey with coxa, distal end of femur, areas adjacent to spurs, spurs pearl white. *Abdomen*. Metallic dark grey banded with creamy yellow, distal end creamy yellow. *Forewing*. Greyish ochreous to tornus, followed by faint orange, V-shaped mark from costa ; 3 costal and 2 dorsal upraised spots, silver margined with black. Silver marking present inside the V-shaped mark, additional silver narrowly margining the V subterminally. Fringe grey mixed with white. *Hindwing*. Uniformly pale ochreous. Fringe grey, turning buff yellow along costa.



Fig. 1. The female holotype of *Lithariapteryx loriculata*.

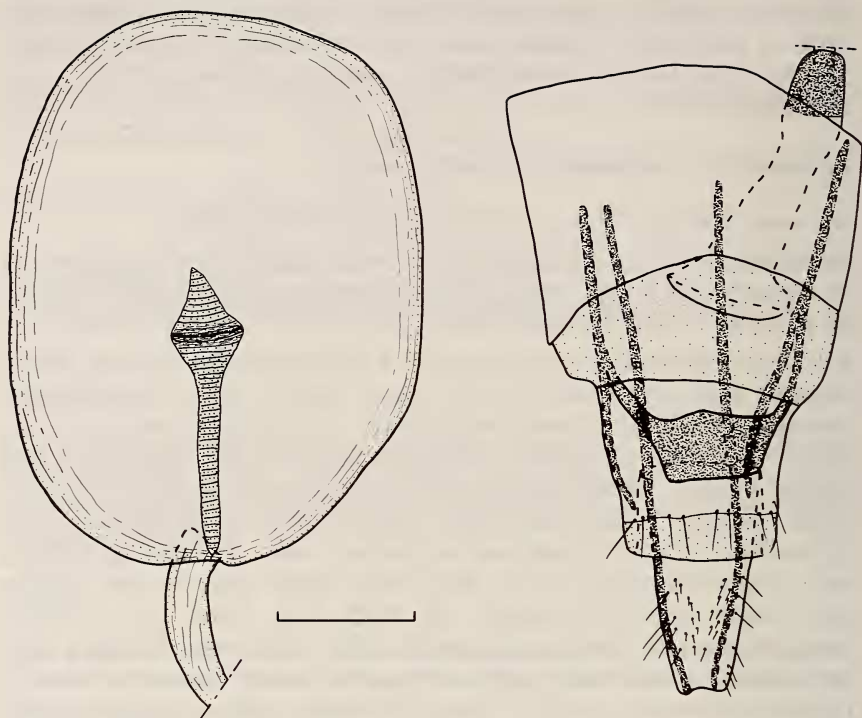


Fig. 2. The genitalia of the female holotype of *Lithariapteryx loriculata*; middle portion of ductus bursae missing due to feeding by psocids on abdomen. Reference bar 0.25 mm.

*Female genitalia* (Fig. 2). Ventral branches of apophyses anteriores originated from broad medial sclerotized band; basal portion of ductus bursae enlarged, with a sclerotized region remote from ostium; corpus bursae oval, densely scobinate over entire surface; signum ventral, elongate, enlarged into a diamond shape.

*Male*. Unknown.

**BIOLOGY.** Larval host unknown. Larvae of all four species of *Lithariapteryx* in western Nearctic feed as facultative miners on *Abronia* or *Mirabilis* in Nyctaginaceae (POWELL, 1991). According to MABBERLEY (1987: 374), *Mirabilis* is well represented both in North and South America. On the broad scale mapped by EYRE (1968), the Rio Songo at 750 m appears to be in a tropical montane forest type. This contrasts with the semi arid to arid habitats that the four *Lithariapteryx* occupy in the southwestern Nearctic (POWELL, 1991).

DISCUSSION. *Lithariapteryx loriculata* is similar to *L. abroniaeella* Chambers, 1875, but the two can be separated easily with the following characters: 1) signum in *L. abroniaeella* is not enlarged distally; 2) ostium surrounded by a thin ring in *L. abroniaeella* whereas it is invaginated, forming a bowl-like sclerite in *L. loriculata*; 3) ventral branches of apophyses anteriores with a triangular median band in *L. abroniaeella*, a transverse, broad band in *L. loriculata*; 4) scaling inside the V-shape mark on the forewing is white in *L. abroniaeella*, silver in *L. loriculata*.

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